

C. A. DANZ.  
RAILROAD TIE.  
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1,166,663.

Patented Jan. 4, 1916.

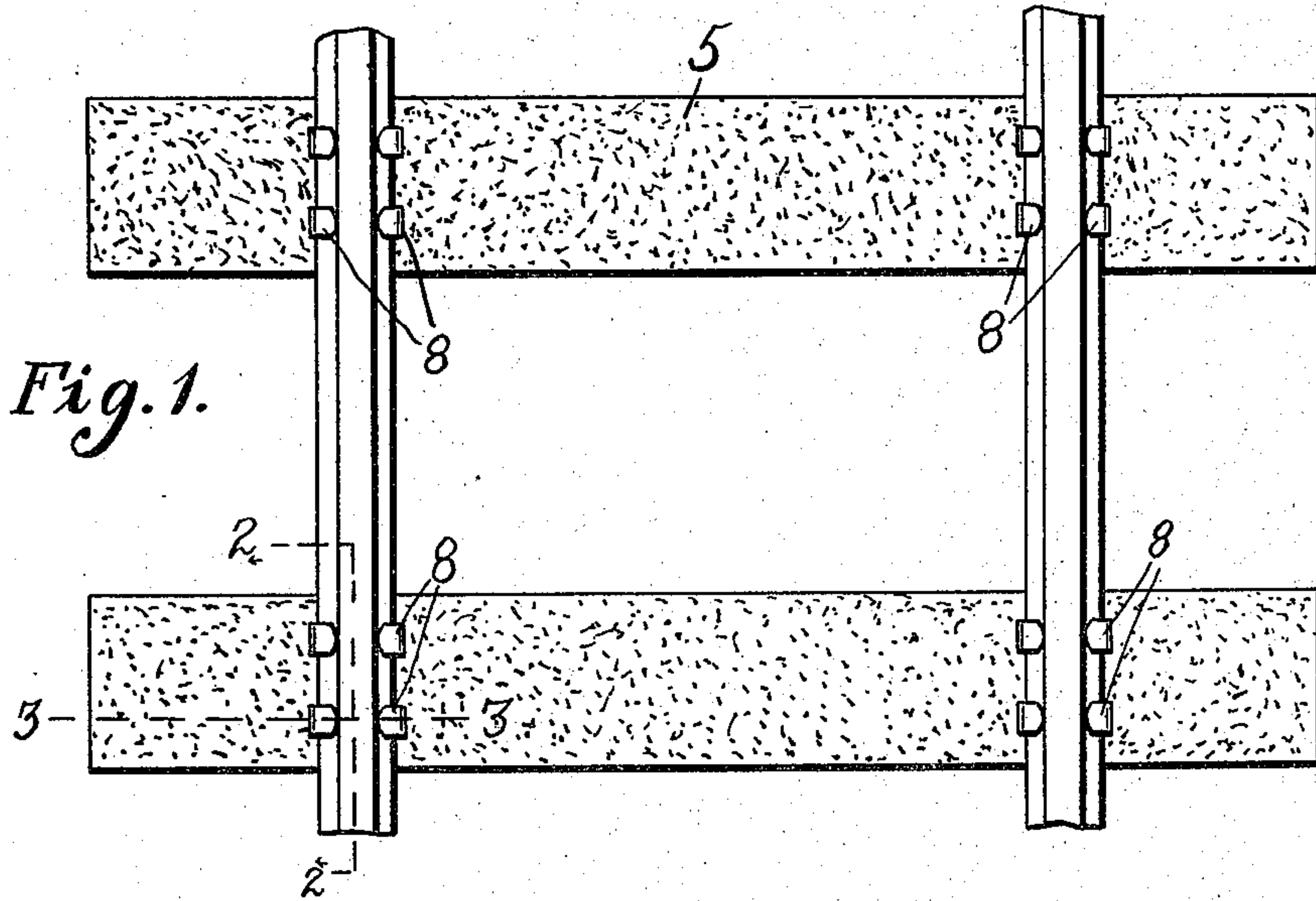


Fig. 1.

Fig. 2.

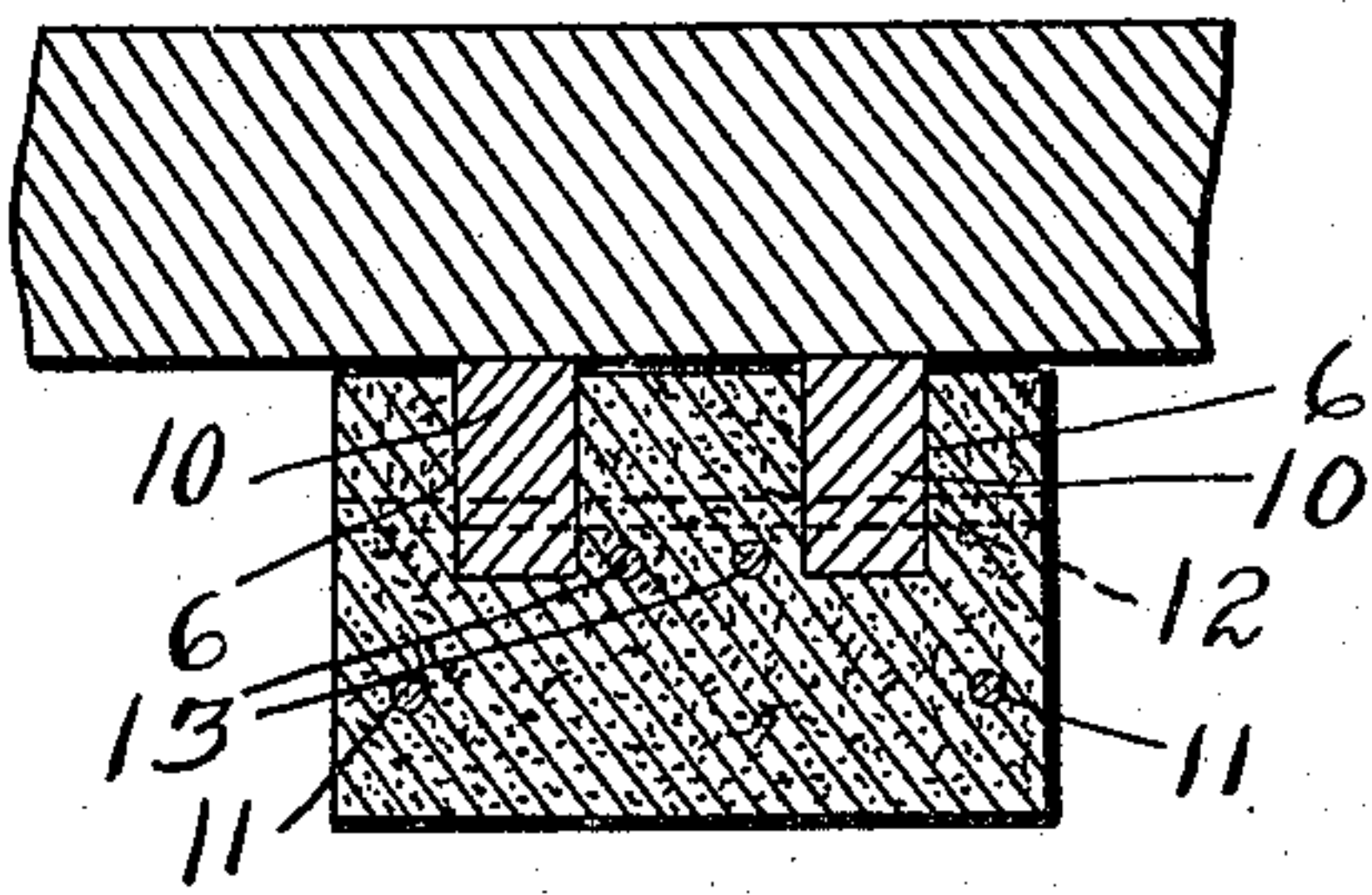


Fig. 3.

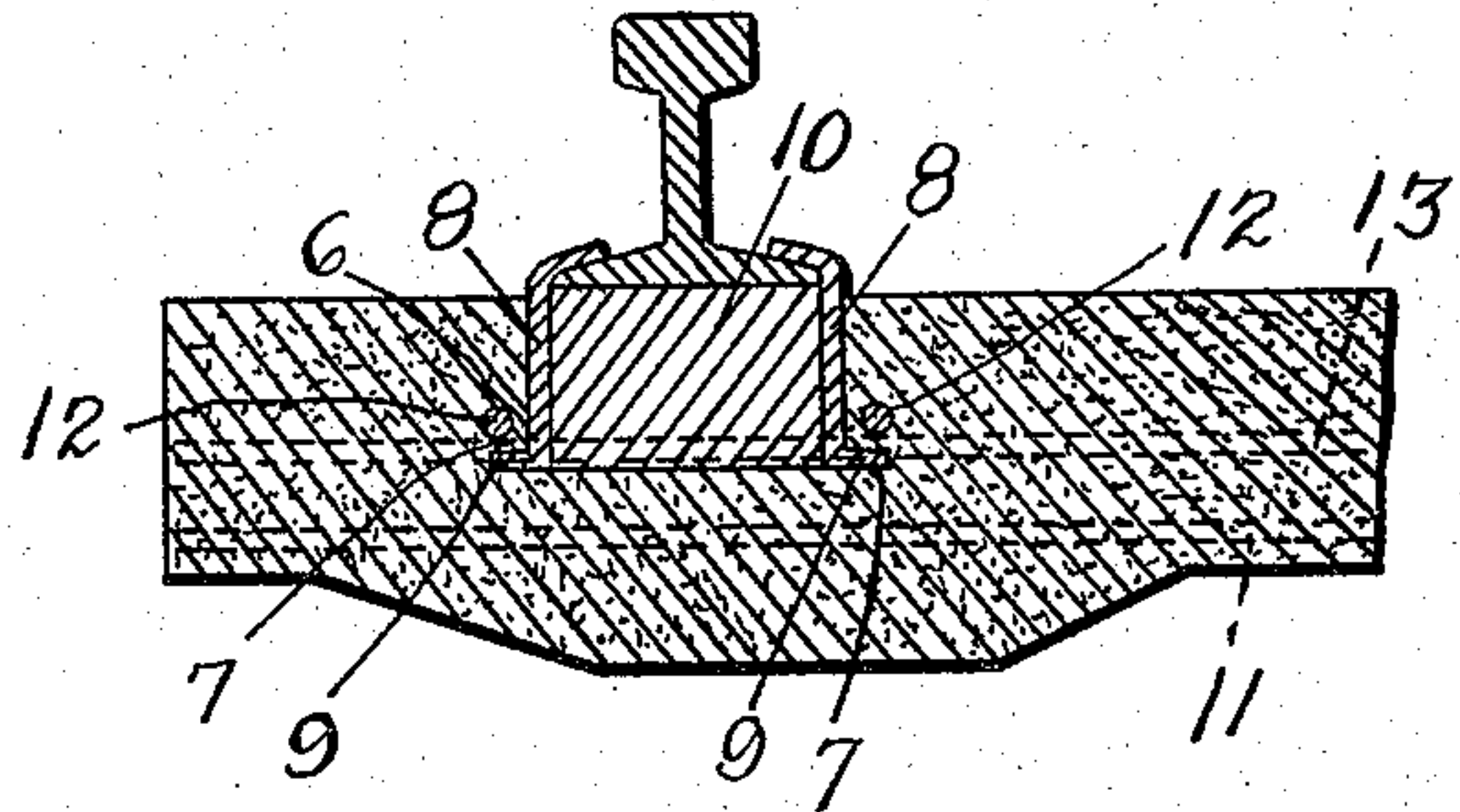


Fig. 5.

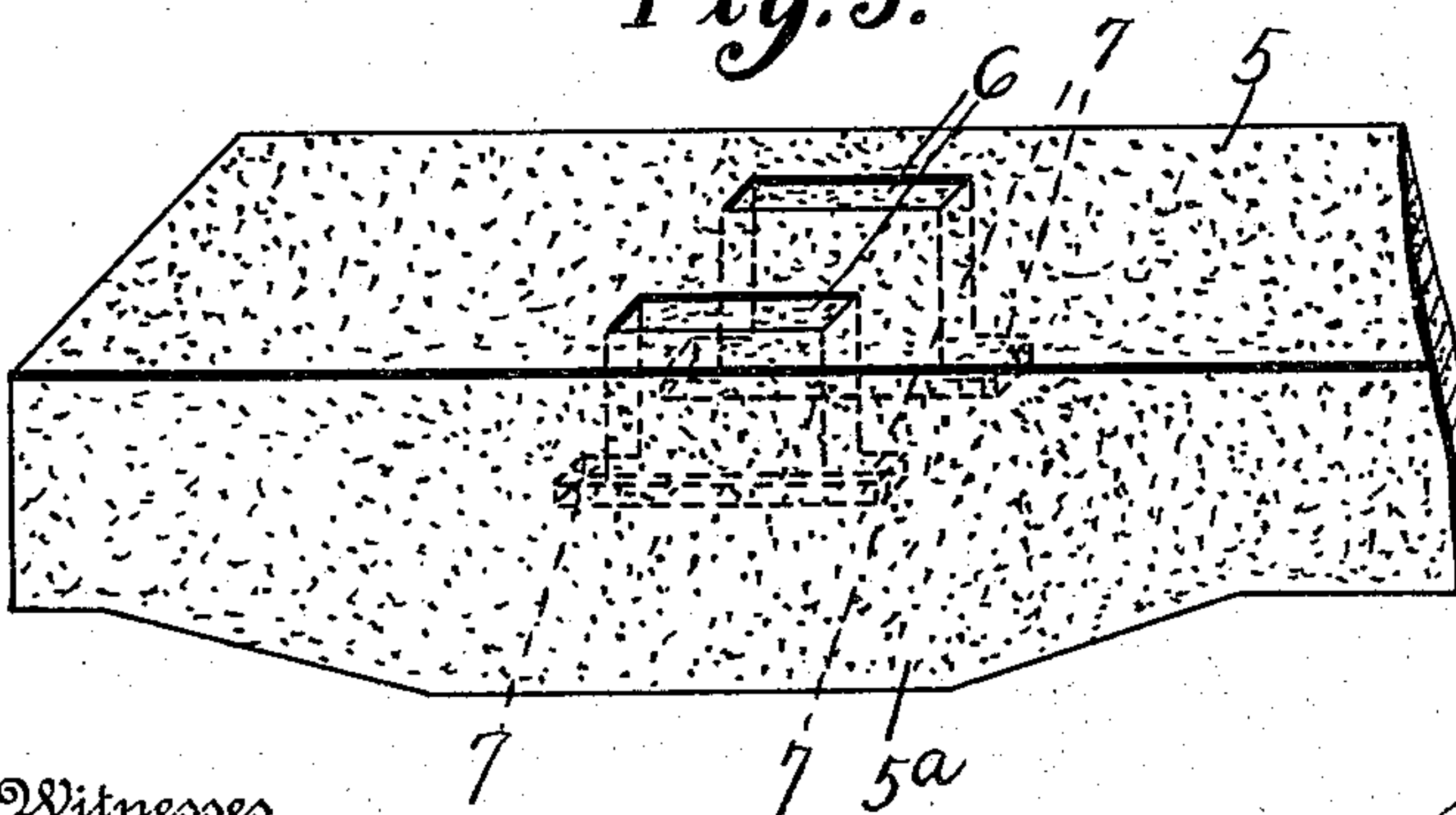


Fig. 4.



Witnesses  
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# UNITED STATES PATENT OFFICE.

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## RAILROAD-TIE.

1,166,663.

Specification of Letters Patent.

Patented Jan. 4, 1916.

Application filed September 22, 1915. Serial No. 52,112.

*To all whom it may concern:*

Be it known that I, CARL A. DANZ, a citizen of the United States, residing at Tonica, in the county of La Salle, State of Illinois, have invented certain new and useful Improvements in Railroad-Ties; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to new and useful improvements in railroad ties particularly of that type embodying a concrete body structure and is particularly directed to the provision of such means associated with such ties for securing railroad rails thereon.

It is an object of the present invention to provide means for securing rails on the tie which may be inserted in the tie after the tie has been molded and in such interlocking relation with parts thereof as not to require driving of the members comprising said means into the tie.

It is another object of the invention to provide a means for securing the members of the rail fastening means in such interlocking relation with the tie, which means serves also as a cushion for the rails to take up the vibration thereof due to passage of the train thereover and thus prevent possible disintegration of adjacent tie portions due to such vibration.

It is further an object of the invention to provide rail securing means and such cushion means which may be associated with the tie at a minimum cost consistent with efficient and durable operation.

With the above and other objects and advantages in view, the invention resides more particularly in the novel combination, formation and arrangement of parts as more fully described hereinafter and pointed out in the appended claims.

Reference is had to the accompanying drawings, wherein similar characters of reference designate corresponding parts throughout the several views, and in which:

Figure 1 is a top plan view of ties constructed in accordance with the present invention and having rail sections fixed thereon by the improved securing means. Fig. 2 is a sectional view taken transversely through a tie on the line 2—2 of Fig. 1. Fig. 3 is a fragmental view taken longi-

tudinally through one end of the tie on the line 3—3 of Fig. 1. Fig. 4 is a perspective view of one of the rail securing members. Fig. 5 is a perspective view of one end portion of the tie.

Referring now more particularly to the accompanying drawings there is shown a tie 5 molded of concrete and provided with reinforcing metal bars hereinafter to be described. The means for securing the rail sections on this tie comprises at each end thereof a pair of parallel longitudinally extending recesses 6 opening at the top. The lower portions of the recesses are extended longitudinally at each end to provide sockets 7 and rail securing members 8 are provided each comprising a single bar of malleable metal which is adapted to be disposed vertically in one respective end of a recess 6 and having its lower end directed laterally at 9 to extend into the socket 7.

Disposed in each recess between the members 8 is a block 10 formed of wood or like material and serving to hold the members 8 against displacement. The upper ends of the members 8 extend above the tie and the blocks 10 also preferably extend slightly above the tie. In securing the rails they are placed to rest on these blocks between the members 8, and the tops of the members 8 are then bent inwardly over the base flange portions of the rails to effectively secure them. Thus the blocks serve a dual function in that they also serve as a cushion for the rails to prevent transmission of the usual vibration occasioned by the passage of the train over said rails to the concrete body of the tie.

An exceedingly simple device has thus been provided whereby the rails may be secured to the tie with a minimum amount of labor and at a minimum cost as respects the structure.

Should it be desired to detach the rails, or should the members 8 become broken or it be found desirable for any reason to remove them, such may be readily effected by bending them up to release the rails and then lifting out the blocks 10.

While I have illustrated and described a particular embodiment of my invention, I have merely done so for the sake of convenience and I do not wish to be limited to that particular embodiment as it is obvious that numerous changes may be made within



the details of construction thereof without in any way departing from the spirit of the invention as claimed.

Said reinforcing means for the tie comprises a pair of longitudinal metal bars 11 which extend throughout the tie at its lower portion and pairs of transverse bars 12 which extend adjacent the ends of the openings. There is also provided between each pair of openings the reinforcing bars 13. Adjacent the openings the tie is preferably provided with an enlargement 5<sup>a</sup> on its bottom which materially strengthens the structure adjacent said openings.

What I claim is:

1. The combination with a railway tie provided with openings in its end portions, of rail securing members interlockingly secured in the openings and rail cushion blocks disposed in the openings and holding said members in such interlocking position.

2. The combination with a railway tie having openings in the tops of its end portions, of rail securing members interlockingly disposed in the end portions of the openings and blocks disposed in said openings for holding the rail securing members in such interlocking position.

3. The combination with a railway tie

having longitudinally extending openings in its end portions extended longitudinally at the lower end portions to provide sockets, of rail securing members disposed in the ends of the openings and projecting thereabove to be bent over a rail extended across the opening, lateral extensions at the lower ends of said members extending into the sockets and retaining blocks disposed in the openings between the members.

4. The combination with a railway tie having longitudinally extending openings in its end portions extended longitudinally at the lower end portions to provide sockets, of rail securing members disposed in the ends of the openings and projecting thereabove to be bent over a rail extended across the opening, lateral extensions at the lower ends of said members extending into the sockets and retaining blocks disposed in the openings between the members, said retaining blocks also forming cushions for the rails.

In testimony whereof, I affix my signature, in the presence of two witnesses.

CARL A. DANZ.

Witnesses:

HERMAN PLETSCH,  
ALBERT PLETSCH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."